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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/755,086

01/09/2004

David S. Lawrence

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8599

7590

08/08/2007

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EXAMINER

PETERSEN, CLARK D

ART UNIT

PAPER NUMBER

1657

MAIL DATE

DELIVERY MODE

08/08/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/755,086

Applicant(s)

LAWRENCE, DAVID S.

Examiner

Clark D. Petersen

Art Unit

1657

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) 129-131 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 49-54, 56-58, 60-66, 72, 74, 81, 86, 87, 103, 105, 112, 117, 127, 128, 133 and 134 is/are rejected.
- 7) ☒ Claim(s) 67-69, 71, 73, 75-78, 83, 85, 88-91, 95, 97-100, 102, 104, 106-109, 114, 116, 118, 119, 121-123, and 137 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continuation of Disposition of Claims: Claims pending in the application are 49-69,71-78,81,83,86-91,95,97-100,102-109,112,114,116-119,121-123,127-131,133 and 134.

DETAILED ACTION

This action is in response to the amendment, filed 16 April 2007, in which claims 1, 3, and 4 were canceled, claim 56 was amended, and new claim 137 was presented.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

All objections and rejections not repeated in the instant Action have been withdrawn due to Applicant's response to the previous Action.

Claim Rejections - 35 USC § 112

Claims 127 and 128 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

This is a new rejection.

Claim 60, from which claims 127 and 128 depend, states "phosphorylation by a protein kinase...produces at least a 20% change in fluorescence intensity". Claim 127 states that "a metal ion chelator induces the change in fluorescence intensity". The claims as currently written appear contradictory as to what is producing the change in fluorescence.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 49, 50 and 127 are rejected under 35 U.S.C. 102(b) as being anticipated by Khalil-Rizvi et al (Biochemistry, 1997).

This is a new rejection.

Khalil-Rizvi et al teach a peptide containing a serine at the terminal end; this peptide is a siderophore. Attached to this peptide at the N-terminal serine is a fluorescent quinoline derivative (see Abstract, for example). It is an inherent property that a peptide containing a serine should act as a kinase substrate to some degree in an *in vitro* setting; therefore this peptide reads on claim 49. Furthermore this peptide complexes with iron, reading on claim 127 (see Fig. 6, p. 4168, for example). Activation is a broad term and could read on any positive action taken by one of ordinary skill in the art, such as dissolving the substrate in a solution containing a protein kinase.

Therefore the teachings of Khalil-Rizvi et al are deemed to anticipate instant claims 49, 50 and 127.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1657

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 49-54, 56-58, 60-66, 72, 74, 81, 86, 87, 103, 105, 112, 117, 127, 133, and 134 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khalil-Rizvi et al (Biochemistry 1997) in view of Haugland et al (US Patent # 5,635,608, issued 2 June 1997).

This is a new rejection.

The teachings of Khalil-Rizvi et al are discussed above and applied as before.

Haugland et al teach a photolabile caging moiety for protecting molecules.

Haugland et al teach that photolysis of a caging group, i.e. by exposing a cell containing a caged molecule to light, makes it possible to release the parent compound into the biological system of interest with much better temporal and spatial resolution than it is by simple diffusion of an uncaged molecule (see Background, col. 1, lines 22-28, for example). Haugland et al teach that one can attach a photolabile moiety of the structure recited in the instant application (see, e.g., claim 53) to a serine, threonine, or tyrosine, and that photolysis yields a normal serine, threonine, or tyrosine (see claim 10, col. 17, for example).

A person of ordinary skill in the art at the time the invention was made would have been motivated to prepare caged, photoactivatable fluorescent kinase substrates as described in the instant application, because Haugland et al teaches that one can attach a photolabile moiety to a serine, threonine, or tyrosine, whereupon photoactivation the serine, threonine, or tyrosine returns to its previous, biologically

Art Unit: 1657

functional structure. Haugland teaches that this allows for better temporal and spatial resolution when observing cellular signaling phenomena.

Hence, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to attach a photolabile caging moiety as recited in instant claim 53, for example, to fluorescently labeled peptides as taught by Khalil-Rizvi et al.

Claims Objections

Claims 129-131 are objected to as depending from a withdrawn claim; their status has not been changed from (previously presented) or (original).

Claims 67-69, 71, 73, 75, 76-78, 83, 85, 88-91, 95, 97-100, 102, 104, 106-109, 114, 116, 118, 119, 121-123, and 137 are objected to as depending from rejected claims.

Conclusion

No claims are allowed.

Because Examiner has presented new grounds of rejection, this Action is NOT FINAL.

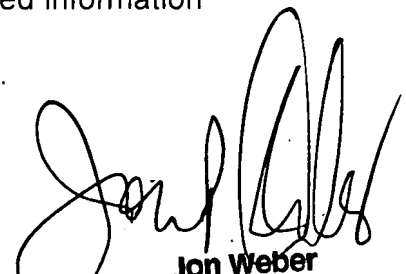
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clark D. Petersen whose telephone number is (571)272-5358. The examiner can normally be reached on M-F 8:30-5:00.

Art Unit: 1657

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon Weber can be reached on (571)272-0925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CDP
7/31/2007



Jon Weber
Supervisory Patent Examiner